

Dear Examiner, Please Amend the claims as follow:

1-(Withdrawn) Procedures and methods for electrical actuation of non-biological artificial muscles, such as ionic polymeric synthetic artificial muscles, by means of biological nerve, such as mammalian sciatic nerve, action potential.

2- (withdrawn) Procedures and methods for using the nerve of a biological system or entity to generate an action potential, which is subsequently, amplified and applied to a sample of an electro-active ionic polymeric artificial muscle to cause it to bend, flex and twitch.

3-(Withdrawn) Procedures and methods for using the sciatic nerve to generate an action potential which is subsequently amplified and applied to a cantilever sample of an electro-active ionic polymeric artificial muscle to cause it to bend, flex and twitch.

4-(New) Methods for electrical actuation of non-biological artificial muscles by electricity generated by live biological nerves, such methods comprising of placing electrodes on biological nerves that are alive, excitation of biological nerves to generate an action potential voltage and subsequently applying the generated voltage to non-biological artificial muscles to cause them to move and deform.

5- (New) Methods of claim 4 in which the electrodes are placed on a sciatic nerve of a live rat, the sciatic nerve is excited and the generated action potential voltage is used to induce deformation in an artificial muscle.

6-(New) Methods of claim 4 in which the electrodes are placed on any mammalian nerve to generate an action potential voltage upon excitation of the mammalian nerve and using the voltage generated to activate non-biological artificial muscles.

7-(new) Methods of claim 4 and 6 in which the action potential voltage generated by the placement of electrodes on the mammalian nerves and excitation of the mammalian nerves is amplified to activate ionic polymer metal composite artificial muscles

Thus the new set of claims are:

1-(New) Methods for electrical actuation of non-biological artificial muscles by electricity generated by live biological nerves, such methods comprising of placing electrodes on biological nerves that are alive, excitation of biological nerves to generate an action potential voltage and subsequently applying the generated voltage to non-biological artificial muscles to cause them to move and deform.

2- (New) Methods of claim 1 in which the electrodes are placed on a sciatic nerve of a live rat, the sciatic nerve is excited and the generated action potential voltage is used to induce deformation in an artificial muscle.

3-(New) Methods of claim 1 in which the electrodes are placed on any mammalian nerve to generate an action potential voltage upon excitation of the mammalian nerve and using the voltage generated to activate non-biological artificial muscles.

4-(new) Methods of claim 1 and 3 in which the action potential voltage generated by the placement of electrodes on the mammalian nerves and excitation of the mammalian nerves is amplified to activate ionic polymer metal composite artificial muscles